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January 17, 2013

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

Re: Notice of *Ex Parte* – CC Docket No. 96-45; CC Docket No. 01-92; WC Docket No. 03-109; WC Docket No. 05-337; WC Docket No. 07-135; WC Docket No. 10-90; GN Docket No. 09-51

Dear Ms. Dortch:

In a series of recent *ex parte* filings, Level 3 and Bandwidth.com ("the CLECs") argue that they are entitled to assess local end office switching charges for their limited role in partnering with various "over-the-top" VoIP providers to route to the public Internet calls to the VoIP providers' end users.[1] However, neither these CLECs nor their VoIP partners provide end office switching. The CLECs point to various signaling and call setup functions that switches (and some non-switches) may perform, but for decades, it has been established in courts, in the industry, and at the Commission—including in the very proceeding relied on by the CLECs—that the defining characteristic of an end office switch is the "actual connection of [subscriber] lines and trunks."[2] The CLECs and their over-the-top VoIP partners indisputably do *not* perform the physical work of connecting and switching VoIP-PSTN calls onto individual subscriber lines, and thus do not provide end office switching or its functional equivalent.

Rather, the CLECs simply dump the calls at issue in an undifferentiated stream onto the public Internet, over which they may travel for hundreds or even thousands of miles and over the facilities of multiple Internet backbone providers and ISPs before their ultimate delivery to the premises (or mobile device) where the over-the-top VoIP application is being used. The CLECs and their VoIP partners are thus providing end office switching only if placing calls destined for

[1] Letter from John T. Nakahata, *et al*., to Marlene H. Dortch, FCC, dated September 10, 2012 ("*CLEC 9/10/12 Ex Parte*"); *see also* Letter from John T. Nakahata, *et al*., to Marlene H. Dortch, FCC, dated December 17, 2012 ("*CLEC 12/17/12 Ex Parte*"); Letter from John T. Nakahata, *et al*., to Marlene H. Dortch, FCC, dated October 4, 2012 ("*CLEC 10/4/12 Ex Parte*").

[2] *In the Matter of Petitions For Reconsideration and Applications For Review of RAO 21*, 12 FCC Rcd. 10061, 1066, ¶ 11 (1997) ("*RAO Recon Order*").

multiple locations in a single undifferentiated stream onto the public Internet could be deemed to involve the same functions and work as using local switches to separate and place calls onto individual subscriber lines. But the Commission recently and emphatically confirmed that the Internet is *not* equivalent to a subscriber line, and that the "exchange of packets over the Internet" does not entitle a carrier to assess end office switching charges.[3]

The CLECs contend that principles of "symmetry" and fairness demand that they be allowed to assess end office switching charges notwithstanding their much more limited role, but, in truth, it is the CLECs that seek an unfair regulatory advantage. End office switching charges are "among the highest recurring intercarrier compensation charges" precisely because actual providers of end office switching have made the "substantial investment" necessary to deploy local switches that have "tangible connections" with end users.[4] When the CLECs and their VoIP partners route the calls at issue to the public Internet, in contrast, they make use of no local facilities and have no knowledge or control over where or how the calls will be routed once they are handed off to an intermediate Internet backbone provider at a peering point far removed from the neighborhood exchange facilities that actually separate the call onto the functional equivalent of a subscriber line. The CLECs and their VoIP partners do not provide any function remotely equivalent to end office switching, and there is nothing asymmetric or unfair in the straightforward application of the Commission's longstanding rules and policies that prohibit them from seeking compensation for work that they do not actually perform.[5]

I. THE CLECS' COMPENSATION ARGUMENTS ARE BASED ON AN INCOMPLETE AND MISLEADING DESCRIPTION OF THE VERY LIMTED ROLE THEY AND THEIR VOIP PARTNERS PLAY IN THE ROUTING OF VOIP-PSTN CALLS.

The CLECs supply an impressive array of graphs, charts, and attachments filled with Internet Protocol and SIP jargon that they contend document their provision of end office switching in routing calls in the general direction of their VoIP partners' end users (*e.g.*, *CLEC 9/10/12 Ex Parte*, Figs. 1 & 2, p. 11 & Att. A). What is missing is any detailed description of how the calls are actually physically routed. That routing—and the very limited role played by the CLECs and their VoIP partners—is simple to explain, and it forecloses the CLECs' end office switching claims.

Consider the following example: a PSTN caller in New York uses AT&T to make a long distance call to a customer of one of Level 3's over-the-top VoIP partners. The called party is using her over-the-top VoIP application on a computer located at a residence served by AT&T's U-verse broadband Internet facilities and service. The called party's over-the-top VoIP service is

[3] *AT&T Corp.* v. *YMax Commc'ns*, 26 FCC Rcd. 5742, 5759, ¶ 44 (2011) ("*YMax Order*").

[4] *Id.* at 5757, ¶ 40.

[5] *Connect America Fund et al.*, 26 FCC Rcd. 17663, 18026, ¶ 970 (2011) ("*Connect America Order*").

nomadic, and the called party has a Seattle phone number, but is actually using the VoIP service at a computer in Los Angeles.

When the caller dials the phone number, AT&T carries the call on high-capacity interexchange trunks and hands the call off to the Level 3 media gateway in Seattle (because it is a Seattle number and Level 3 is the CLEC to whom the number is assigned). Level 3 or its VoIP partner performs a lookup to determine the IP address of the computer associated with this phone number.[6] Once they have determined the IP address of the end user, the only physical routing function they perform is to dump the packets (together with the packets associated with many other VoIP calls) onto the public Internet on another high-capacity IP link (here, to AT&T's Internet backbone network).

It is important to underscore that the IP address gives Level 3 or its VoIP partner very little information about where the end user is physically located, how the call may be ultimately routed to that user or even what type of connection will be used to deliver the call (*e.g.*, cable, fiber, wireless). IP addresses include a "prefix" that identifies the IP address as one of the millions served by a particular Internet backbone provider. An AT&T address range thus tells a backbone provider with whom AT&T peers that this is an IP address that can be reached by delivering the information to a peering interconnection point with AT&T. Except in unusual circumstances, Internet backbone providers use "hot potato" routing—*i.e.*, backbone providers deliver traffic to other backbone providers at whatever peering point happens to be nearest. Thus, in this example, Level 3—a Tier 1 backbone provider—would deliver the packets over its own backbone network to its nearest peering point with AT&T, which happens to be in Seattle.[7]

Beyond the peering point, however, Level 3 and its VoIP partner have no idea where the call goes and no control over how it is routed. The IP address merely identifies the computer as one of millions reachable through the AT&T backbone network (both AT&T broadband customers and customers of the many other ISPs that are reachable over AT&T's backbone facilities).[8] Further, Level 3 and its VoIP partner not only lack control over the path to reach the

[6] In this scenario, when the VoIP customer connects to this computer in Los Angeles, the client service will register the IP address of that computer in a database as being associated with that phone number.

[7] In the case of Bandwidth, which is not a Tier 1 Internet backbone provider, its role in routing the call is even more remote from the end user, because it is merely handing the call to other managed Internet service providers that perform even the minimal routing to another peering point that Level 3 would perform for itself.

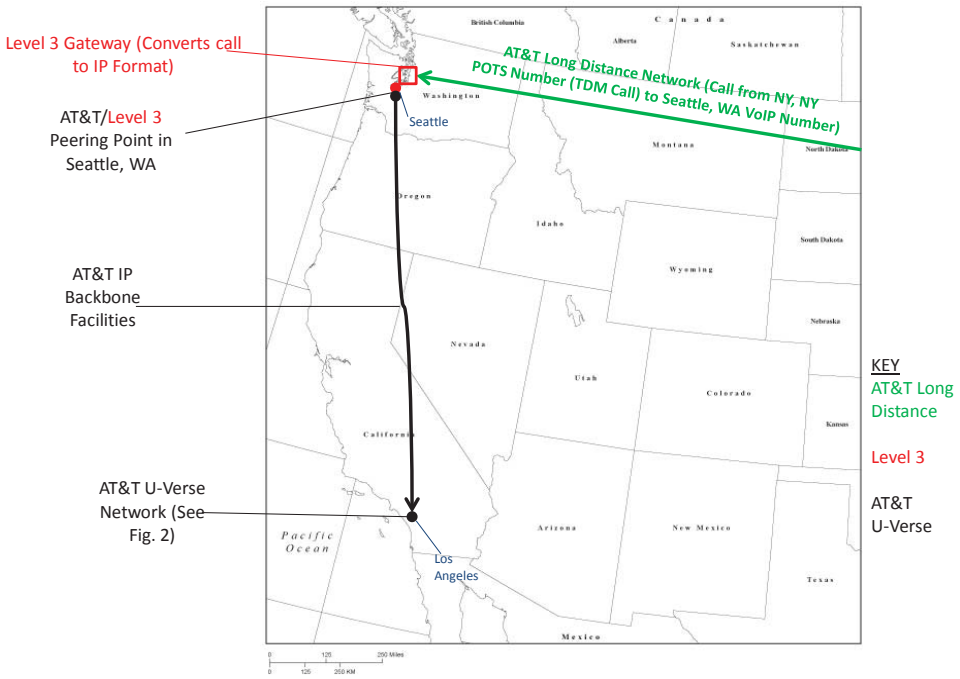
[8] Although many IP addresses provide two other pieces of information that would give Level 3 additional clues as to where the computer hosting the VoIP application may be, Level 3 would almost always ignore such information completely in favor of hot potato routing. For example, some backbone providers may include with their IP prefixes a "metric" —*i.e.*, a measure of how likely it is that a given IP prefix is closer to one peering point or another. In this example, AT&T might use metrics to signal to Level 3 that this IP address is closer to its Los Angeles peering point than to Seattle. Except in unusual circumstances, however, Level 3 would ignore the metric and deliver the packets in "hot potato" routing to Seattle anyway. Similarly, an IP prefix

destination address once the call packets leave their network, they have no control over the return path. In almost all cases, the return path is asymmetrical, and the return path will traverse not merely different routers and links, but possibly completely different ISP networks.

Thus, while the CLECs' charts include numerous "arrows" between their facilities and the end user, purporting to depict that their facilities establish a direct and fixed path to the end user, *e.g.*, *CLEC 9/10/12 Ex Parte*, Figs. 1 & 2, Att. A, this is simply misleading.

The reality is that Level 3 has a high-capacity IP link that dumps all calls in undifferentiated streams onto the public Internet through connections to its affiliated Internet backbone, which is in turn interconnected with AT&T's backbone network. Accordingly, a more accurate depiction of their role in call routing would be the following:

Fig. 1. Call Routing NY POTS to Seattle VoIP



The CLECs' facilities do not place calls onto individual lines or IP links serving the end user. Rather, they place them on the Internet, where multiple providers may handle and route the calls before they reach the end user.

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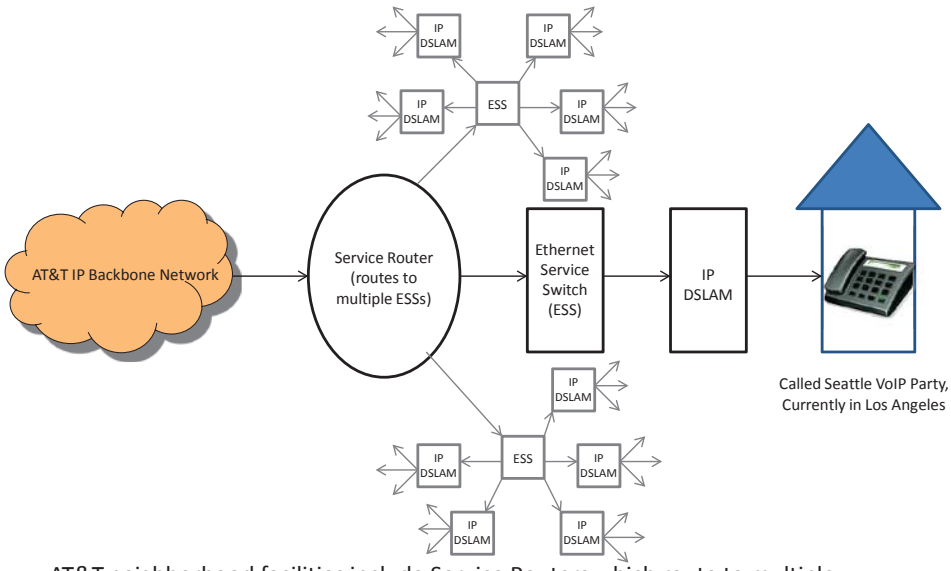
may include a list of the ISP networks (referred to as autonomous systems) through which this IP prefix has previously been routed, which would give Level 3 additional hints about which network or ISP subtending the backbone provider may serve this customer. While this prefix metric may represent a routing "distance" for the entire prefix, the individual IP addresses could be spread geographically all over the originating ISP network. But, here again, Level 3 would ignore such information, because Level 3 has no role or responsibility for routing those packets to whichever ISP may ultimately be serving this customer.

Further, the CLECs' charts significantly understate the vast network of local facilities—and the substantial work and functionality that these facilities provide—that the called party's ISP must deploy in neighborhoods in order for the calls to be routed and switched onto facilities that directly serve the end user.[9] Figure 2 below depicts the neighborhood facilities that AT&T deploys in connection with its U-Verse service in order to carry the CLEC VoIP calls (and other packets) to end users:

Fig. 2. Neighborhood Facilities for U-Verse Service



AT&T neighborhood facilities include Service Routers which route to multiple ESSs, which in turn route to multiple IP DSLAMs within neighborhoods. These IP DSLAMs serve many individual end users.

Using the example above, once the call reaches AT&T's IP backbone network in Seattle, AT&T—not the CLECs or their VoIP provider partners—carries the call down to the Los Angeles area. The call is then routed over numerous sets of routers and fiber transmission facilities, and it is the AT&T local broadband facilities that then place the call onto an individual IP link that connects to the end user.

In short, Level 3 and its VoIP partners do not take calls from trunks and place them onto subscriber lines. They take voice packets and pass them in bulk and in an undifferentiated stream onto the public Internet. The only routing they perform is to send the packets in the direction of the nearest peering point with an Internet backbone provider. Once the packets are delivered to the Internet peering point, they may travel hundreds or even thousands of additional miles and may traverse multiple networks before they finally reach a neighborhood ISP and an

[9] *CLEC 9/10/12 Ex Parte*, Figs. 1 & 2, Att. A. For instance, in Attachment A to the CLECs' September 10, 2012 filing, the broadband ISPs' extensive local facilities are depicted as a simple piece of telephone cabling, of the kind that can be purchased at Radio Shack.

individual subscriber facility that could be considered the functional equivalent of a subscriber telephone line. If this is the functional equivalent of "end office switching," then the term has lost all meaning.

II. THE COMMISSION'S RULES SQUARELY PROHIBIT LEVEL 3 AND BANDWIDTH.COM FROM ASSESSING END OFFICE CHARGES FOR THE CALLS AT ISSUE.

The Core End Office Switching Function Is Connecting End User Loops To Trunks, And Level 3 And Bandwidth.com Do Not Perform This Function For The Calls At Issue. It has been established for decades that the core end office switching function is "interconnection, *i.e.*, the actual connection of lines and trunks."[10] Because, as explained above, neither Level 3, nor Bandwidth.com, nor their over-the-top VoIP provider partners have facilities that connect trunks to loops, they are not providing end office switching functions. Rather, these CLECs and their VoIP partners set-up calls and provide an intermediate link in the middle of those calls, often far from the end user, that is more akin to interexchange transiting service or (at most) tandem switching, and that is not end office switching.

A local, or end office, switch is widely recognized as the switch that terminates the loop transmission facilities that connect directly to end user customers. While end office switches have other functions, such as using signaling networks to help set up or take-down calls and perform other call management functions, the Commission has emphasized that the "characteristic that distinguishes" an end-office switch from other switches and central office equipment (*RAO Recon Order* at 10067, ¶ 11) is that the end office switch takes commingled calls from trunks, and selects and places the particular call for a particular end user onto the dedicated loop facility that directly connects the end office switch with that end user (and *vice-versa*). No other facility performs this function.

Indeed, this core function has been widely recognized for decades in court proceedings and in the industry. Courts have recognized that end office switches are connected to loops and thus "directly serve customers in a particular local calling area"[11] Basic telecommunications dictionaries define end office switches as local switches "in which trunks and loops are

[10] *RAO Recon Order* at 10067, ¶ 11.

[11] *SBC Inc*. v. *FCC*, 414 F.3d 486, 491 (3d Cir. 2005); *Verizon Commc'ns* v. *FCC*, 535 U.S. 467, 489-90 ("the loop runs from terminals to local switches") (2002); *Atlas Tel. Co.* v. *Okla. Corp. Comm'n*, 400 F.3d 1256, 1264 (10th Cir. 2005) ("the terminating carrier's end office switch…directly serves the called party."); *Ind. Bell Tel. Co.* v. *McCarty*, 362 F.3d 378, 384 (7th Cir. 2003) (defining "end-office switch" as "a computer that directly serves the…customer being called."); *Paetec Commc'ns* v. *MCI Commc'ns Servs.*, 712 F. Supp. 2d 405, 413 (E.D. Pa. 2010) (describing "end-office" as "switch-to-end-user-customer."); *Sprint Commc'ns. Co.* v. *Neb. PSC*, 2007 U.S. Dist. LEXIS 66902 at * 13 (D. Neb. 2007) ("the end office switch…directly serves the called party."); *MCI WorldCom Commc'ns* v. *Pac. Bell Tel. Co.*, 2002 U.S. Dist. LEXIS 4789 at *6 (N.D. Ca. 2002) ("End office switches transfer calls to and from customers within a small geographic area.").

terminated and switched."[12] And, significantly, in light of the Commission's rules that a competitive LEC's access services must be functionally equivalent to those of incumbent LECs, 47 C.F.R. § 61.26, the switched access tariffs of incumbent LECs uniformly define the term "end office switch" to be "a local Telephone Company switching system where Telephone Exchange Service customer station loops are terminated for purposes of interconnection to trunks."[13]

The Commission's own rules and orders are equally clear that an end office switch's core function is to take a call from a trunk and place it on a particular end user loop, so that the call is terminated to the end user. For example, the Commission's STATISTICS OF COMMUNICATIONS COMMON CARRIERS – "one of the most widely used reference works in the field of telecommunications" – states that "[c]entral office switches are assemblies of equipment and software designed to establish connections among lines and between lines and trunks."[14]

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[12] Javvin Tech., NETWORK DICTIONARY, at 92 ("Central Office (CO) is the local switching facility of a telephone company to which telephones are connected. Central Office is a common carrier switching center in which trunks and loops are terminated and switched") *available at* books.google.com/books?isbn=1602670005; www.telecomdictionary.com ("[a]n end office is a switching system that interconnects calls between local customers and the telephone network. Each end office switch can usually supply service up to 10,000 customers"); NEWTON'S TELECOM DICTIONARY, 25th Ed. at 435 (2009) (defining "end office" as a "central office to which a telephone subscriber is connected. Frequently referred to as a Class 5 office. The last central office before the subscriber's phone equipment. The central office which actually delivers dial tone to the subscriber. It establishes line to line, line to trunk, and trunk to line connections.").

[13] *See, e.g.*, Att. B (compilation of excerpts of incumbent LEC tariffs, defining end office switch to be a system where "customer station loops are terminated for purposes of interconnection to trunks").

[14] FCC, STATISTICS OF COMMUNICATIONS COMMON CARRIERS, 2006/07 Ed., at iii, 116 (rel. Sept. 2010); *id.* at 115 ("Switched access lines connect end-user customers with their end office for switched services."); *see also, e.g., Southwestern Bell Tel. Co.*, 12 FCC Rcd. 19311, n. 23 (1997) ("An incumbent LEC's 'central office' is where the local loops serving end users interconnect with the LEC's exchange system"); *In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent LECs*, 18 FCC Rcd. 16978, 17244, ¶ 429 ("an important function of the local circuit switch is as a means of accessing the local loop"), *vacated in part on other grounds*, *USTA* v. *FCC*, 359 F.3d 554 (D.C. Cir. 2004); *Application of Indiana Switch Access Div*, 1986 FCC LEXIS 3689, n.5 ("End office is defined as a local switching office where loops are terminated for purposes of interconnection to each other and to trunks"). Likewise, in defining the terms "loops," "subscriber lines" and "transport," the Commission has made clear that an end office places calls from trunks onto loops or subscriber lines, *i.e.*, transmission facilities that "directly serve[]" a particular subscriber. *See, e.g.*, 47 C.F.R. § 51.701(c) (defining transport as the transmission from an interconnection point to the terminating carrier's *end office switch that directly serves the called party*") (emphasis added); *Ameritech Operating Companies Petition for Declaratory Ruling*, 11 FCC Rcd. 14028, 14041-14032, ¶ 6 (1996) ("the facilities that connect subscriber premises and LEC end office switches, [are] also known as 'local loops' or 'subscriber lines.'"); *Qwest Commc'ns* v. *No. Valley Commc'ns*, 26 FCC Rcd. 8332, n.38

Further, in the very *RAO* proceeding upon which the CLECs so heavily rely (*CLEC 9/10/12 Ex Parte*, at 3, 4, 10), the Commission stated that "interconnection, *i.e.*, *the actual connection of lines and trunks*, is the characteristic that distinguishes switches from other central office equipment."[15]

As explained above, the CLECs' facilities manifestly do not actually connect lines and trunks. Their argument that they provide local end office switching functions thus depends on the view that a facility that places calls in an undifferentiated stream onto the public Internet is performing the same function as an end office switch that places a call on an individual subscriber line.[16] But the Commission has emphatically rejected this argument. In its *YMax Order*, the Commission addressed claims by a competitive LEC that it was entitled to collect end office switching and other access charges, even though its tariff defined end office switch using the traditional and established meaning, namely a facility where end user loops are terminated and interconnected with trunks.[17] Like the CLECs here, YMax depended on the local facilities of unaffiliated broadband ISPs to carry calls to and from calling and called parties.[18] YMax also merely handed calls off to the public Internet, and yet YMax argued that its facilities were the same as an end office switch because they created a "virtual channel" by "exchang[ing] streams of IP packets transmitted over the Internet," which "serves the same functions as a legacy fixed loop" and thus as a traditional end office switch.[19]

The Commission squarely rejected the argument that a facility that places a call on the Internet is the same thing as a facility that places a call onto a loop. It explained that "[u]nder this interpretation, the 'virtual loops' YMax claims to provide would be of indeterminate length and configuration. They could extend thousands of miles via numerous intermediaries throughout the country (or even the world), or only a few miles via a couple of intermediaries in contiguous states. . . . If this exchange of packets over the Internet is a 'virtual loop,' then so too

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(2011) (common lines are the "facilities [that] link[] a particular individual or entity to a CLEC's central office").

[15] *RAO Recon Order*, 12 FCC Rcd. 10061, 10067, ¶ 11.

[16] *See 9/10/12 Ex Parte* at 4. The CLECs' contention that they provide local switching necessarily means that what they euphemistically call the "shared facilities" between their softswitch and the end user—which consists of the intercity networks of multiple Internet backbone providers and the intra-exchange transport networks, routers, and multiplexers of ISPs or other local carriers—constitute the functional equivalent of a "common line" for purposes of that rule.

[17] *YMax Order* at 5755-5756, ¶¶ 37-38.

[18] *Id.* at 5745-5746, 5757, ¶¶ 5, 7, 41.

[19] *See, e.g. id.* at 5758-5759, ¶¶ 42, 44 ("In essence, YMax contends that the entire worldwide Internet—from a Called/Calling Party's premises through the network of the Called/Calling Party's ISP, through the networks of other ISPs, up to an including the connection YMax purchases from its own ISPs . . . comprises a 'virtual loop' that terminates at [its] equipment").

is the entire public switched telephone network—and the term 'loop' has lost all meaning."[20] The arguments advanced by the CLECs here are indistinguishable from those the Commission already has flatly rejected in its *YMax Order*.

The CLECs' arguments are also foreclosed by the Commission's *Clarification Order* of its new *Connect America* rules. In that *Order*, the Wireline Competition Bureau rejected a request by a carrier (again, YMax) for the Commission to clarify that a LEC provides the "functional equivalent" of traditional access services, and can charge the full benchmark access rate, including end office switching charges, "regardless of how or by whom the last-mile transmission is provided."[21] In particular, YMax said that it appeared that under the Commission's new rules, "if the physical transmission facilities connecting the IXC and the VoIP service customer are provided in part by one or more unrelated ISPs *(as is the case with YMax or 'over-the-top' VoIP providers such as Skype or Vonage*), then the LEC and its VoIP service partner are not performing the 'access' function and cannot charge for it."[22] YMax asked the Commission to hold that this was not the case, and in support of its proposed interpretation, YMax specifically cited comments filed by Level 3 that had argued—as Level 3 and Bandwidth.com do today—that it should be "not necessary" for LECs to "provid[e] 'loop facilities' or any other physical connection to the VoIP customer." *Id.* at 3.[23] The Bureau "disagreed" with and rejected YMax's proposals to clarify the *Connect America Order*. *Clarification Order* at 2144, ¶¶ 4-5. The *Clarification Order* instead re-affirmed that the Commission's rules do "not permit a local exchange carrier to charge for functions not performed" by the LEC itself or its VoIP partner. *Id.* at 2144, ¶ 4.

In short, the CLECs' position that they provide end office switching functions would require the Commission to drain all meaning from the terms "end office" and "switching." An *end office* switch is not just any piece of equipment in a network that interacts in some fashion with the end user. Rather, it is the local neighborhood facility that switches and places calls to a particular end user onto the specific loop transmission facility that is directly connected to that end user. The facilities of the CLECs, by contrast, are not connected to individual subscriber lines, but to a single pipe to the public Internet—from where voice packets are then sent, via

[20] *Id.* at 5758-5759, ¶ 44.

[21] *Clarification Order*, 27 FCC Rcd. 2142, 2144, ¶ 4 (2012) (discussing Letter of John B. Messenger, counsel for YMax, to Marlene H. Dortch, FCC, at 1 (Feb. 3, 2012) ("Messenger Ltr.")).

[22] Messenger Ltr. at 2 (emphasis added).

[23] YMax also quoted directly from Level 3 filings that had argued—again, as Level 3 does today—that "'it is important for there to be a clear rule as to when a LEC is providing end office functionality and therefore can collect end office switching access charges, either originating or terminating.' Level 3 therefore urged the Commission to 'establish a bright-line test that defines a LEC to be eligible to receive end office switched access charges when it is identified in the NPAC database as providing the calling party or dialed number.'" *Id.* at 3. YMax then argued that the *Connect America Order*'s "purpose was clearly to implement the 'bright line' rule urged by Level 3." *Id.* at 4. The Bureau disagreed.

multiple ISPs and multiple routes, to end users that can be in multiple exchanges, multiple LATAs, multiple area codes, or even multiple states.

The* Connect America *Rules Prohibit The CLECs' End Office Charges. Although the CLECs do not perform end office switching functions as that term is universally understood in the industry and under decades of Commission and court precedent, they nonetheless claim that they are entitled to assess end office switching charges under various provisions of the Commission's new *Connect America* rules. Specifically, they point to Rule 51.913 and the Commission's "symmetry" framework for VoIP-PSTN calls.[24] In reality, the Commission's *Connect America* rules flatly prohibit the CLECs from charging end office switching in these circumstances, and none of the CLECs' contrary interpretations of these rules withstands scrutiny.

In its *Connect America Order*, the Commission re-affirmed that its "long standing policy" is that LECs "should charge only for those services that they provide." *Id.* at 18026, ¶ 970. As to incumbent LECs, this policy has been applied for decades, and in 2004 the Commission confirmed that this common sense rule applies to competitive LECs as well.[25] At that time, some competitive LECs—like Level 3 and Bandwidth.com are today—were attempting to charge end office switching even though they only provided an intermediate link in the middle of the call path, and the actual termination of the call to end users was performed by other providers, such as CMRS providers.[26] The Commission's 2004 *Eighth Report and Order* rejected that approach, and held that, under the principle that LECs can only charge for services that they provide, a competitive LEC could only charge the "end office switching rate when [it] originates or terminates calls to end-users."[27]

In the *Connect America Order*, the Commission continued to apply its established policy that LECs cannot charge for services and functions they do not provide, but, in the context of determining what a LEC could charge when it partners with a retail VoIP provider that performs certain call routing functions, the Commission modified the rule in one respect, allowing a LEC to charge for "functions provided by it *and/or* by its retail VoIP partner." *Connect America Order* at 18026, ¶ 970. This change allowed competitive LECs to charge "the same intercarrier compensation as incumbent LECs do," but only "under comparable circumstances." *Id.* While it was not essential that LECs or their VoIP partners use technology that "correspond[s] precisely" to traditional TDM architecture, the Commission "ma[d]e clear that [its] rules *do not* permit a LEC to charge for functions provided neither by itself or its retail service provider partner." *Id.* Because, as explained above, neither the CLECs nor their VoIP partners have facilities that switch calls onto individual subscriber lines, they do not provide end office functions and cannot

[24] *CLEC 9/10/12 Ex Parte* at 1, 5, 10.

[25] *Access Charge Reform*, 19 FCC Rcd. 9108, 9118-9119, ¶ 21 (2004) ("*Eighth Report & Order*") (citing *Bell Atlantic Telephone Companies*, 6 FCC Rcd 4794 (1991) and *AT&T Corp. v. Bell Atlantic-Pennsylvania*, 14 FCC Rcd 556 (1998)).

[26] *Id.* at 9115-9116, ¶¶ 15-16.

[27] *Id.* at 9118-9119, ¶ 21.

charge end office switching charges under the *Eight Report and Order* and *Connect America* rules.

Rule 51.903 and the *Revised RAO 21 Letter* Do Not Support The CLECs' Claim. The CLECs nevertheless argue that they provide end office switching within the meaning of the new definition of End Office Access Service in 47 C.F.R. § 51.903(d)(3). That rule defines End Office Access Service to include "[a]ny functional equivalent of the incumbent local exchange carrier access service provided by a non-incumbent local exchange carrier." The rule also specifies that a non-incumbent may assess local switching rate elements only if its service is "functionally equivalent" to the rate elements for "local switching" in 47 C.F.R. § 69.106.

Rule 51.903 itself does not enumerate any specific criteria to be evaluated in determining whether a switching service is functionally equivalent to local switching.[28] The CLECs propose a test for functional equivalence based on the Commission's *Revised RAO 21 Letter* which was released in 1992. They argue that the Commission should consider a carrier to be providing the functional equivalent of local switching if it performs what they claim are the eight "core 'local switching' functions" identified by the *Revised RAO 21 Letter*: "attending, control, busy testing, information receiving, information transmitting, interconnection, alerting, and supervising."[29]

But the Commission plainly could not hold that the CLECs provide end office switching under that test. Although the CLECs might reasonably claim that they or their VoIP partners perform six of these eight functions—attending, busy testing, information receiving, information transmitting, alerting, and supervising—they do not perform the two functions that have always been considered the most important ones in defining *end office* switching: interconnection and control.

In its reconsideration of the *Revised RAO 21* Letter, the Commission explicitly stated that, "of the [eight] switch functions listed . . . , interconnection, i.e., *the actual connection of lines and trunks*, is the characteristic that distinguishes switches from other central office equipment."[30] Indeed, the CLECs themselves, following the *Revised RAO 21 Letter*, define "interconnection" as "connects subscriber line to subscriber line or *subscriber line to trunk*."[31] Further, the tariffs of incumbent LECs—the entities to which the CLECs' service must be "functionally equivalent" —define "end office switch" as a switch that terminates loops and interconnects them with trunks, without reference to any call set-up functions.[32]

The CLECs do not perform any function that meets the definition of interconnection of loops and trunks. For an over-the-top VoIP call, however, the CLECs admit that this function

[28] *CLEC 10/4/12 Ex Parte* at 2.

[29] *See Revised RAO 21 Letter* at n.1; *CLEC 9/10/12 Ex Parte* at 9-11.

[30] *Petitions For Reconsideration and Applications For Review of RAO 21*, 12 FCC Rcd. 10061, 10067, ¶ 11 (1997) (emphasis added).

[31] *CLEC 9/10/12 Ex Parte* at 4 (emphasis added).

[32] *See* Att. B (compilation of ILEC tariffs).

would occur over "shared facilities—the Internet."[33] Thus, even under the CLECs' own interpretation of the *Revised RAO 21 Letter*, the "subscriber line" in the over-the-top VoIP scenario is the worldwide Internet, and, as explained above, the Commission has already held that such an open-ended interpretation of the concepts of "end office" and "loop" is not possible.[34]

This is further confirmed by the CLECs' attempt to provide a more detailed description of the various functions they provide in a call and the precise points at which each of the eight functions occurs in their architectures. According to the CLECs, they and their VoIP partners perform certain call-setup functions in their softswitches, consisting mainly of the exchange of various SIP messages, and these functions can be analogized to the eight functions of a switch.

With respect to "interconnection" in particular, the CLECs contend that certain of these SIP messages constitute the functional equivalent of the "interconnection" described in the *Revised RAO 21*.[35] These SIP messages, however, occur only at the application layer; such functions are completely distinct from the physical routing of the voice packets.[36] At most, such functions are akin to signaling functions or perhaps call setup;[37] the exchange of such SIP messages does not perform the work of separating calls from trunks and putting them onto individual subscriber lines. Indeed, two end users sitting at their computers can send the same types of SIP messages to each other directly using a peer-to-peer Internet voice service like the one at issue in the *Pulver Order*.[38] The Commission held in that order, however, that facilitating

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[33] *CLEC 9/10/12 Ex Parte* at 4. The CLECs concede that this is in contrast to a facilities-based VoIP provider (like a cable company), where the CLEC/VoIP provider would place the call on its "own transmission facilities" such as the transmission facility (loop) between its cable head-end and the cable customers' premises. *Id.*

[34] *YMax Order*, 26 FCC Rcd. 5742, 5758, ¶¶ 43-44.

[35] *See* Level 3 9/10/12 *Ex Parte*, Attachment A (arguing that the interconnection function of *Revised RAO 21* occurs when the VoIP provider sends the "SIP 200 OK" message to the end user and receives back a SIP acknowledgement ("SIP ACK"), which permits the voice session to begin).

[36] *See, e.g.*, Network Working Group, "SIP: Session Initial Protocol," June 2002 ("Since SIP messages and the sessions they establish can pass through entirely different networks, *SIP cannot, and does not, provide any kind of network resource reservation capabilities*") (emphasis added) (available at http://www.ietf.org/rfc/rfc3261.txt) ("NWG SIP Memo").

[37] *See, e.g., In the Matter of Facilitating the Deployment of Text-to-911*, 26 FCC Rcd. 13615, 13626, ¶ 29 n.41 (2011) ("SIP is 'an application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants.'"); *Proposed Extension of Part 4 of the Commission's Rules Regarding Outage Reporting*, 27 FCC Rcd. 2650, 2658, ¶ 16 n.43 (2012) (same).

[38] *See Petition for Declaratory Ruling that Pulver.com's Free World Dialup Is Neither Telecommunications Nor a Telecommunications Service*, 19 FCC Rcd. 3307, 3313-3314, ¶ 11 (2004) ("*Pulver Order*").

the exchange of such SIP messages is independent of any underlying "telecommunications"; indeed, for that very reason, the Commission held that Pulver's service was not even subject to Commission regulation.[39] Just as Pulver's service depended on *other* providers and networks to route and deliver its packets to end users (and the end users separately contracted for and paid ISPs to perform those functions), so too the CLECs here piggyback on other services that perform the actual work of guiding the packets to subscriber lines and separating those packets from common facilities onto individual lines (using services that end users purchase from other providers).

For many of the same reasons, the CLECs do not perform the "control" function, which the *Revised RAO 21 Letter* defines as "determines call destination and assigns call to available line or trunk."[40] The CLECs do not assign calls to individual "available" lines. As explained, they simply dump the calls *en masse* onto the public Internet with no knowledge of or control over how they will be routed or even the physical location of the call termination point.

To be sure, the CLECs (and their VoIP partners) are performing *some* very limited functions, and throughout this dispute AT&T has acknowledged that such functions may at least arguably be considered the functional equivalent of tandem switching. In reality, however, it is quite generous to treat these calls as tandem switching. Whatever routing functions these CLECs perform occur very high in the network and can barely be described as an *exchange* access service at all. At best, these CLECs or their VoIP partners perform some amalgamation of signaling and call setup functions, coupled with what in many cases is really the functional equivalent of interexchange switching—switching and directing IP packets to peering points on the inter-city Internet backbone. But whatever the CLECs and their VoIP partners provide, it is not *end office* switching. *See* Att. A (chart showing limited functionality of CLEC service).

The CLECs Misread the Commission's Symmetrical Framework. Even though the CLECs' service does not meet the *Connect America* rules' definition of end office switching, the CLECs argue that the Commission's rules surely *must* permit them to charge end office switching, because the CLECs interpret the *Connect America Order* as generally decreeing a "symmetry" that allows any and all CLECs that partner with VoIP providers to charge the full suite of switched access charges. *CLEC 9/10/12 Ex Parte* at 7-8. The *Connect America Order* and *Clarification Order* do no such thing, and indeed, it is the CLECs that are asking for an asymmetrical result.

Contrary to the CLECs' claim, the Commission's "symmetrical framework" for VoIP-PSTN traffic does not guarantee them a specified rate, without regard for the functions that they or their VoIP partners provide. *Connect America Order* at 18007, ¶ 942. Rather, the Commission intended to adopt an overall approach that did not "advantage[] *in the aggregate* providers relying on TDM networks relative to VoIP providers or vice versa," which would have

[39] *See Pulver Order* at 3313-3314, ¶¶ 11-12 (finding that users of Pulver service sent "SIP invites" and "SIP byes" but Pulver nonetheless provided no "telecommunications").

[40] *See CLEC 9/10/12 Ex Parte* at 4; *cf.* NWG SIP Memo, ("SIP cannot, and does not, provide any kind of network resource reservation capabilities").

occurred if, for example, the Commission's new rules "addressed only IP-originated traffic." *Id.* at 18010, ¶ 948 (emphasis added). Instead, the Commission's rules apply both to originating and terminating VoIP-PSTN traffic; it also adopted uniform rate structures applicable to "toll" VoIP-PSTN traffic and to "other" VoIP-PSTN traffic. *Id.* at 18008, ¶ 944. Consequently, when a TDM provider terminates or originates toll VoIP-PSTN traffic to or from an end user, it pays and is paid the same rate to an IP provider that terminates or originates such traffic to or from an end user. *See id.* at 18007, ¶ 942 (symmetrical framework applies when traffic "is terminated to . . . end user customers"). In adopting this symmetrical framework, the Commission did not abandon, but expressly re-affirmed, the "policy principle" that "comparable uses of the network should be subject to comparable intercarrier compensation charges." *Id.* at 18011, ¶ 949.

The CLECs further argue that the Commission's symmetrical framework is "always asymmetric" as to LECs partnering with "over-the-top" VoIP providers, but this is misleading. *CLEC 9/10/12 Ex Parte* at 1; *CLEC 12/17/12 Ex Parte* at 2. The reason that such LECs cannot charge end office access charges is not that the Commission's framework is asymmetric. Instead, their network and service configurations are not symmetric as to other providers, and thus the CLECs are not providing symmetric functions. AT&T, Verizon and other providers of true end office switching functionality have made the significant investment to deploy local facilities, in neighborhoods, that are actually connected to loop-like facilities that carry Internet broadband services directly to end users' homes. LECs and their over-the-top VoIP partners have not made comparable investments, and do not have any facilities that actually connect to end user lines. Thus, under the Commission's symmetrical framework, where "comparable uses of the network should be subject to comparable intercarrier compensation charges" (*Connect America Order* at 18011, ¶ 949), carriers that perform end office functions can charge for end office services, whereas carriers that do not perform such functions cannot.[41]

In this regard, the Commission made clear that its symmetrical framework supports the Commission's goal of "promot[ing] investment in and deployment of IP networks." *Connect America Order* at 18025, ¶ 968. A rule in which carriers like Level 3 and Bandwidth.com would automatically receive the same end office access rates as carriers like AT&T and Verizon, even though these CLECs have not made the same types of investments and have not deployed neighborhood networks, would undercut that goal, and would make no sense. Indeed, such a result would "disadvantage providers that have already made these investments" in advanced IP networks. *Id.* The Commission has elsewhere explained that "end office switching rates are among the highest recurring intercarrier compensation charges" because they "allow local exchange carriers to recover the substantial investment required to construct the tangible connections between themselves and their customers throughout their service territory." *YMax Order* at 5757, ¶ 40. Level 3 and Bandwidth.com want to receive the "highest" charges, but without making the "substantial investments" in local switch-like facilities that make "tangible

[41] The rule the CLECs seek would lead to asymmetric results in other respects as well. A call terminated on a mobile phone would not be subject to end office or other access charges if that call is terminated directly over the CMRS provider's wireless network. However, if the call is terminated to a mobile phone via an app offered by an over-the-top IP provider, the call would be subject to end office and other access charges under the CLECs' approach.

connections" to end users. There is nothing asymmetric or unfair in the Commission's rules if they are denied the right to assess these charges. To the contrary, allowing them to recover such high charges would provide them "an artificial regulatory advantage in costs and revenues relative to other market participants." *Connect America Order* at 18007, ¶ 942.

III. THE CLECS ARE ASKING FOR A BELATED RECONSIDERATION OF THE RULES, OR A NEW RULE, AND THUS THEIR POSITION COULD BE ADOPTED, IF AT ALL, ONLY PROSPECTIVELY.

For all of the reasons discussed above, it would be patently arbitrary for the Commission to "clarify" the current rules to permit the CLECs to assess end office switching charges in these circumstances.[42] The current rules are already clear, and they mandate the opposite result. The Commission's decades of precedent defining end office switching, coupled with the Commission's more recent rulings that the Internet cannot be considered a subscriber line, preclude any possible interpretation of the *Connect America* rules that would permit these CLECs to assess end office charges on the calls at issue. Accordingly, the CLECs' recent letters are in reality requests for reconsideration of the *Connect America* orders that were filed out of time, and should therefore be dismissed. The Commission could adopt the CLECs' proposed change in policy only through a new rulemaking, and such a rule could apply only prospectively.

Under any conceivable scenario, however, it would be unlawful to apply the CLECs' proposed rule retroactively. Agencies are required to "deny retroactive effect" when there is "a substitution of new law for old law that was reasonably clear." *Verizon Telephone Co.* v. *FCC*, 269 F.3d 1098, 1109 (D.C. Cir. 2001) (quotations omitted). Even if the rule at issue is ambiguous, the Supreme Court just last Term held that if "an agency's announcement of its interpretation is preceded by a very lengthy period of conspicuous inaction"—as is the case here—"the potential for unfair surprise is acute," and to permit substantial liability to be imposed retroactively based on such a sudden "clarification" would "seriously undermine the principle that agencies should provide regulated parties 'fair warning of the conduct [a regulation] prohibits or requires.'" *Christopher* v. *SmithKline Beecham Corp.*, 132 S. Ct. 2156, 2167 (2012).

The Commission's current rules are "reasonably clear" that the limited functions the CLECs and their VoIP partners perform are not end office switching, and Commission precedent precludes the CLECs' argument that the Internet can be considered a subscriber line. But even if the current rules were ambiguous, the CLECs' interpretation would represent a sharp break with the Commission's past holdings and its "conscious inaction" on enforcement of the CLECs' position. As the CLECs themselves note, their right to collect the types of access charges at issue was "often in dispute" prior to the *Connect America Order*.[43] As in *Christopher*, the Commission—over a lengthy period of "conscious inaction" —took no enforcement action against any carrier for non-payment of such access charges to over-the-top VoIP providers.

[42] *See, e.g.*, *CLEC 9/10/12 Ex Parte* at 2 (asking the Commission to "clarify . . . how to interpret and apply 47 C.F.R. §§ 51.913(b) and 61.26(f)").

[43] *CLEC 12/17/12 Ex Parte* at 2.

Instead, the Commission addressed these issues "for the first time" in the *Connect America Order*,[44] but the CLECs concede that the new rule does not set forth any criteria for how one determines whether a given architecture is functionally equivalent to local switching and that this issue is "now being litigated in numerous states."[45] Indeed, that is why the CLECs propose a new test, derived from the *Revised RAO 21 Letter*.[46]

As explained above, however, the Commission expressly held in the *Connect America Order* that VoIP providers could only assess access charges for the functions they actually provide, and there are decades of Commission and judicial precedent establishing that end office switching is defined by the physical connection of trunks to loops—functions that the CLECs do not provide. Equally important, the Commission contemporaneously rejected similar claims by YMax. Because treating "virtual" connections to VoIP end users over the Internet as the provision of end office switching flies in the face of the universal industry understanding of "end office" and "subscriber line," the Commission held that YMax had violated the Communications Act by attempting to assess tariffed end office switching charges in circumstances strikingly similar to those here.

Accordingly, even if the Commission were now to adopt the CLECs' position, it could not lawfully adopt that new rule in the guise of a "clarification" that applies retroactively to the effective date of the *Connect America Order*. Even agencies with undisputed authority to adopt legislative rules are routinely reversed when they seek retroactively to impose new obligations "under the guise of interpreting a regulation."[47] As the Supreme Court recently emphasized, deference to agencies' interpretations of ambiguous rules "creates a risk that agencies will promulgate vague and open-ended regulations that they can later interpret as they see fit, thereby 'frustrating the notice and predictability purposes of rulemaking.'" *Christopher*, 132 S. Ct. at 2168 (quoting *Talk America, Inc.* v. *Michigan Bell*, 131 S. Ct. 2254, 2266 (2011) (Scalia, J. concurring)). "It is one thing to expect regulated parties to conform their conduct to an agency's interpretations once the agency announces them; it is quite another to require regulated parties to divine the … interpretation[] in advance or else be held liable" when the new "interpretation[is announced] for the first time in an enforcement proceeding" or otherwise outside the process of notice and comment. *Id.* at 2168. Permitting CLECs like Level 3 and Bandwidth.com to charge end office switching charges for the minimal softswitch functions they provide far from any actual subscriber line would constitute just such an impermissible "clarification," and thus could be applied only prospectively.

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[44] *Id.* at 2.

[45] *CLEC 9/10/12 Ex Parte* at 2

[46] *Id.*

[47] *See, e.g.*, *Christensen* v. *Harris Cnty.*, 529 U.S. 576, 588 (2000); *Summit Petroleum Corp. v. EPA*, 690 F.3d 733 (6th Cir. 2012); *Hardy Wilson Memorial Hosp. v. Sebelius*, 616 F.3d 449 (5th Cir. 2010); *Casares-Castellon* v. *Holder*, 603 F.3d 1111 (9th Cir. 2010); *Boose v. Tri-County Metropolitan Trans/ Dist. Of Oregon*, 587 F.3d 997 (9th Cir. 2009); *City of Cleveland* v. *Ohio*, 508 F.3d 827 (6th Cir. 2007); *In re Sealed Case*, 237 F.3d 657 (D.C. Cir. 2001).

Sincerely,

/s/ David L. Lawson
David L. Lawson
Attorney for AT&T Corp.

cc: Julie Veach
Deena Shetler
Victoria Goldberg
Randy Clarke

ATTACHMENT A

Contrary to the CLECs' claims, *see* 9/10/12 *Ex Parte*, Att. A, neither the CLECs nor their VoIP partners perform the core *end office* switching functions; at most, they perform call signaling or set-up functions.

CORE END OFFICE SWITCHING FUNCTIONS

RAO Function	Performed by CLEC or VoIP Partner	Performed by End Users' ISP
1) Control: determines call destination and assigns call to available line or trunk	**No.** Do not know actual route of call packets to end user (only to peering point), do not know actual location of end user, and use SIP, which does not provide any kind of network resource reservation capabilities	**Yes**. Has deployed neighborhood facilities (routers, fiber, DSLAMs, etc.) that connect to individual end users
2) Interconnection: Connects subscriber line to subscriber line or subscriber line to trunk	**No.** Merely place calls in an undifferentiated stream onto the public Internet; have no knowledge or control over where or how the calls will be routed afterward; make no use of local facilities.	**Yes.** Routes packets of calls onto local IP links directly connected to the end user

CALL SET-UP OR SIGNALING FUNCTIONS

RAO Function	Performed by CLEC or VoIP Partner	Performed by End Users' ISP Or Other Provider
3) Attending; **4) Busy Testing;** **5) Information Receiving;** **6) Information Transmitting;** **7) Alerting;** **8) Supervising**	Yes Call set-up and signaling functions have been performed traditionally by all types of switches in conjunctions with a separate signaling network.[1] Thus, while the facilities of the CLECs and/or their VoIP partners may perform some call set-up or signaling functions, so, too, do other switches.[2] These functions are not analogous to end office switching, but to signaling or to switching generally.	Yes

[1] *See, e.g., Unbundled Rate Elements for SS7 Signaling*, 11 FCC Rcd. 3839, ¶ 4 (1996) (SS7 signaling network is used "to establish transmission paths over which telephone calls are carried (known as *call set-up*). The *SS7* network also directs the closure of those transmission paths after a telephone call has ended"); *Local Competition Order*, 11 FCC Rcd. 15499, ¶ 455 (1996) ("Signaling systems *facilitate the routing* of telephone calls between *switches*") (emphasis added); *id*. ¶ 482 (nearly all calls "are set-up and controlled by separate signaling networks"); 47 U.S.C. § 271(c)(2)(B)(x) (requiring RBOCs to provide access to "signaling necessary for call routing and completion"; signaling is a separate checklist item from local switching).

[2] *See Unbundled Rate Elements*, 11 FCC Rcd. 3839, ¶¶ 3, 5 ("An SSP is *an end office or access tandem switch* that is capable of originating, transmitting, and receiving *SS7* messages for *call set up*") (emphasis added).

ATTACHMENT B

This tariff cancels PACIFIC BELL Tariff F.C.C. No. 128

Regulations, Rates and Charges applying to the provision of
Access Services within the operating territory of
PACIFIC BELL TELEPHONE COMPANY and
Concurring carriers listed on Page 23. (x)

(x)

Access Services are provided by means of wire, fiber optics, radio or any other suitable technology or a combination thereof.

The original effective date of Pacific Bell Tariff No. 128 is June 13, 1984, except for Section 7, which became effective April 1, 1985.

(x)

(x)

(x) Issued under authority of Special Permission No. 11-003 of the FCC in order to withdraw material filed under Transmittal No. 445 without its becoming effective and to restore currently effective material.

(This page filed under Transmittal No. 447)

ACCESS SERVICE

2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

End Office Switch

The term "End Office Switch" denotes a local Telephone Company switching system where Telephone Exchange Service customer station loops are terminated for purposes of interconnection to trunks. Included are Remote Switching Modules and Remote Switching Systems served by a host office in a different wire center.

End User

The term "End User" denotes any customer of an interstate or foreign telecommunications service that is not a carrier, except that a carrier other than a Telephone Company shall be deemed to be an "End User" when such carrier uses a telecommunications service for administrative purposes and a person or entity that offers telecommunications services exclusively as a reseller shall be deemed to be an "End User" if all resale transmissions offered by such reseller originate on the premises of such reseller.

Entrance Facility

The term "Entrance Facility" denotes the transmission path between the customer's designated premises and the serving wire center where the customer would normally obtain local dial tone.

Entry Switch

See First Point of Switching

Envelope Delay Distortion

The term "Envelope Delay Distortion" denotes a measure of the linearity of the phase versus frequency of a channel.

Ethernet Virtual Connection (EVC)

A logical connection between the customer demarcation point and the Ethernet network. (Nx)

(Nx)

(x) Issued under authority of Special Permission No. 03-101 of the F.C.C.

Regulations, Rates And Charges
applying to the provision of Access Services
within a Local Access and Transport Area (LATA)
for connection to interstate communications
and for interstate intraLATA facilities
for customers within the operating
territory of

THE AMERITECH OPERATING COMPANIES

Illinois, Indiana,
Michigan, Ohio and
Wisconsin

The original tariff became effective July 12, 1986.

The name, title and mailing address of tariff's Issuing Officer is located on the bottom of Page 1, the Check Sheet. (x) (x)

Access Services are provided by means of wire, fiber optics, radio or any other suitable technology or a combination thereof.

(x)

(x)

(x) Issued under authority of Special Permission No. 11-003 of the FCC in order to withdraw material filed under Transmittal No. 1730 without its becoming effective and to restore currently effective material.

2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Donor Switch - denotes the original switch source of an NXX that has been designated as portable and from which a subscriber has moved their service, while retaining their Directory Number, to a different service provider's switch. (N)

Dual Tone Multifrequency Address Signaling - a type of signaling that is an optional feature of Switched Access Feature Group A. It may be utilized when Feature Group A is being used in the terminating direction (from the point of termination with the customer to the local exchange end office). An office arranged for Dual Tone Multifrequency Signaling would expect to receive address signals from the customer in the form of Dual Tone Multifrequency signals. (M)

Echo Control - the control of reflected signals in a telephone transmission path.

Echo Path Loss - the measure of reflected signal at a four-wire point of interface without regard to the send and receive Transmission Level Point.

Echo Return Loss - a frequency weighted measure of return loss over the middle of the voiceband (approximately 500 to 2500 Hz), where talker echo is most annoying.

Effective Four-Wire - a condition which permits the simultaneous independent transmission of information in both directions over a channel. The method of implementing effective four-wire transmission is at the discretion of the Telephone Company (physical, time domain, frequency-domain separation or echo cancellation techniques). Effective four-wire channels may be terminated with a two-wire interface at the customer's premises. However, when terminated two-wire, simultaneous independent transmission cannot be supported because the two-wire interface combines the transmission paths into a single path.

Effective Two-Wire - a condition which permits the simultaneous transmission in both directions over a channel, but it is not possible to insure independent information transmission in both directions. Effective two-wire channels may be terminated with two-wire or four-wire interfaces.

End Office Switch - a local Telephone Company switching system where Telephone Exchange Service customer station loops are terminated for purposes of interconnection to trunks. Included are Remote Switching Modules and Remote Switching Systems served by a host office in a different wire center.

End User - any customer of an interstate or foreign telecommunications service that is not a carrier, except that a carrier other than a telephone company shall be deemed to be an "end user" when such carrier uses a telecommunications service for administrative purposes, and a person or entity that offers telecommunications services exclusively as a reseller shall be deemed to be an "end user" if all resale transmissions offered by such reseller originate on the premises of such reseller.

ACCESS SERVICE

Regulations, Rates and Charges applying to the provision of Access Services within a Local Access and Transport Area (LATA) or equivalent Market Area and for the provision of InterLATA services, in accordance with Section 271(b)(3) of the Communications Act of 1934, as amended by the Telecommunications Act of 1996, for connection to interstate communications facilities for customers within the operating territory of the Southwestern Bell Telephone Company in the State(s) of Arkansas, Kansas, Missouri, Oklahoma and Texas as provided herein. (x)

	Company Code
Southwestern Bell Telephone Company	9533
Arkansas	5211
Kansas	5214
Missouri	5213
Oklahoma	5215
Texas	5216

All material contained herein is moved from Tariff F.C.C. No. 68.

The original effective date for the Southwestern Bell Telephone Company Tariff F.C.C. No. 68 is May 24, 1984 and, for Section 7, April 1, 1985.

Access Services are provided by means of wire, fiber optics, radio or any other suitable technology or a combination thereof.

Not all services described in this tariff are available from every wire center. The services available from each specific wire center are listed in the National Exchange Carrier Association, Inc., Tariff F.C.C. No. 4.

(x)

(x)

(x) Issued under authority of Special Permission No. 11-003 of the FCC in order to withdraw material filed under Transmittal No. 3316 without its becoming effective and to restore currently effective material.

(This page filed under Transmittal No. 3319)

2. General Regulations (Cont'd)

2.7 Definitions (Cont'd)

Electronic Access

Denotes the capability to electronically transmit data messages between a customer's computer and the Telephone Company's computer.

Electronic Connection (EC-1) (N)

Denotes a 51.84 Mbps bandwidth of the SONET transmission platform, which is an electrical equivalent of the optical OC1. A DS3 is mapped into the SONET format using an EC-1 as a packaging mechanism.

End Office Switch

Denotes a local Telephone Company switching system where Telephone Exchange Service customer station loops are terminated for purposes of interconnection to trunks. Included are Remote Switching Modules (RSM) and Remote Switching Systems (RSS) served by a host office in a different wire center.

End User

Denotes any customer of an interstate or foreign telecommunications service that is not a carrier, except that a carrier other than a Telephone Company shall be deemed to be an "end user" when such carrier uses a telecommunications service for administrative purposes and a person or entity that offers telecommunications services exclusively as a reseller shall be deemed to be an "end user" if all resale transmissions offered by such reseller originate on the premises of such reseller.

Entity

Denotes something that exists as a particular and discrete unit (e.g., corporations or subsidiary company).

Entrance Cable

Denotes a single mode dielectric fiber optic cabling arrangement that consists of a fiber optic cable from the Expanded Interconnection virtual network interface, the riser tail to which the fiber optic cable is spliced and the termination of the riser tail onto a fiber termination shelf within the Telephone Company's wire center.

Entrance Facility

Denotes a Switched Transport facility between a Telephone Company serving wire center and a customer premises that provides a customer with dedicated transport from the serving wire center to the customer's premises.

ISSUED: JUNE 16, 2011

EFFECTIVE: JULY 1, 2011

ORIGINAL TARIFF EFFECTIVE: JANUARY 31, 1992

ACCESS SERVICE

Regulations, Rates and Charges
applying to the provision of Access Services
within a Local Access and Transport Area (LATA) or equivalent
market area for connection to interstate communications facilities
for customers within the
operating territory of the

BELLSOUTH TELECOMMUNICATIONS, LLC

The title and street address of this tariff's Issuing Officer are located on the top of Page 1, the Check Sheet.

Access Services are provided by means of wire, fiber optics, radio or any other suitable technology or a combination thereof.

This tariff cancels BellSouth Telecommunications, Inc. Tariff F.C.C. 1 in its entirety.

X This tariff is filed under the authority of Special Permission No. 11-005 of the Federal Communications Commission.

ACCESS SERVICE

2 - General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Effective 4-Wire

The term "Effective 4-Wire" denotes a condition which permits the simultaneous independent transmission of information in both directions over a channel. The method of implementing effective 4-wire transmission is at the discretion of the Telephone Company (physical, time domain, frequency-domain separation or echo cancellation techniques). Effective 4-wire channels may be terminated with a 2-wire interface at the customer's premises. However, when terminated 2-wire, simultaneous independent transmission cannot be supported because the two wire interface combines the transmission paths into a single path.

Egress Circuits

The term "Egress Circuits" denotes the facility used to transport the customer's dialed BellSouth Remote Access Service traffic to the customer's designated location once it has been collected and aggregated by the remote access server.

Emergency Interruption Service

The term "Emergency Interruption Service" denotes a function performed by the Telephone Company's BellSouth Inward Operator Services operators which allows BellSouth Inward Operator Services operators to enter a connection for the purpose of attempting to interrupt a conversation in progress on a line within the LATA.

End Office Switch

The term "End Office Switch" denotes a local Telephone Company switching system where Telephone Exchange Service customer station loops are terminated for purposes of interconnection to trunks. Included are Remote Switching Modules and Remote Switching Systems served by a host office in a different wire center.

ACCESS SERVICE

This tariff cancels
THE BELL ATLANTIC TELEPHONE COMPANIES
Tariff F.C.C. No. 1
in its entirety.

Regulations, Rates and Charges
applying to the provision of Access Services
within a Local Access and Transport Area (LATA)
for connection to interstate
communications and for interstate intraLATA facilities for customers
within the operating territory of

THE VERIZON TELEPHONE COMPANIES

in the states of

	Company Code
Pennsylvania	5000
Delaware	5010
Maryland	5030
Virginia	5040
New Jersey	5120

(D)

in the District of Columbia

Washington	5020

and for services in the interstate corridors
between specific Pennsylvania and New Jersey points
and New Jersey and New York points
as provided herein

Access Services are provided by means of wire, fiber optics, radio or any other suitable technology or a combination thereof.

(X) The title and address of the issuing officer applies to this tariff in its entirety.

Vice President, Federal Regulatory
1300 I Street, NW, Washington, D.C. 20005

2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Echo Path Loss

The term "Echo Path Loss" denotes the measure of reflected signal at a 4-wire point of termination without regard to the send and receive Transmission Level Point.

Echo Return Loss (Z)

The term "Echo Return Loss" denotes a frequency weighted measure of return loss over the middle of the voiceband (approximately 500 to 2500 Hz), where talker echo is most annoying.

Effective 2-Wire

The term "Effective 2-Wire" denotes a condition which permits the simultaneous transmission in both directions over a channel, but it is not possible to insure independent information transmission in both directions. Effective 2-wire channels may be terminated with 2-wire or 4-wire interfaces.

Effective 4-Wire

The term "Effective 4-Wire" denotes a condition which permits the simultaneous independent transmission of information in both directions over a channel. The method of implementing effective 4-wire transmission is at the discretion of the Telephone Company (physical, time domain, frequency-domain separation or echo cancellation techniques). Effective 4-wire channels may be terminated with a 2-wire interface at the customer's premises. However, when terminated 2-wire, simultaneous independent transmission cannot be supported because the 2-wire interface combines the transmission paths into a single path.

End Office Switch

The term "End Office Switch" denotes a local Telephone Company switching system, where Telephone Exchange Service customer station loops are terminated for purposes of interconnection to trunks. In the case of a Remote Switching Module, the term End Office Switch designates the combination of the Remote Switching Module and its Host.

End User

The term "End User" denotes any customer of an interstate or foreign telecommunications service that is not a carrier, except that a carrier other than a telephone company shall be deemed to be an "end user" when such carrier uses a telecommunications service for administrative purposes and a person or entity that offers telecommunications services exclusively as a reseller shall be deemed to be an "end user" if all resale transmission offered by such reseller originate on the premises of such reseller.

This tariff cancels THE BELL ATLANTIC TELEPHONE COMPANIES Tariff F.C.C. No. 11.

ACCESS SERVICE

Regulations, Rates and Charges
applying to the provision of Access Services
within a Local Access and Transport Area (LATA)
or equivalent market area for connection to interstate
communications facilities or for broadcast over the air of
audio or television program material and jurisdictionally
interstate IntraLATA Services for customers
within the operating territories of the

VERIZON NEW ENGLAND INC.	Company Code	
in the States of		
Massachusetts (MA)	5112	(D)
Rhode Island (RI)	5114	(D)

and the

VERIZON NEW YORK INC.		
in the States of		
New York (NY)	5130	(D)
Connecticut (CT)	5131	(D)

and to the provision of services in the
interstate Corridor between specific New York
and New Jersey locations as defined herein.

The title and street address of this tariff's Issuing Officer are located at the bottom of Page 1, the Check Sheet.

Access Services are provided by means of wire, fiber optics, radio or any other suitable technology or a combination thereof.

The original effective date for THE VERIZON TELEPHONE COMPANIES Tariff F.C.C. No. 11 is April 28, 2001.

The title and address of the issuing officer applies to this tariff in its entirety.

2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

800 Service Provider

The term "800 Service Provider" denotes a telecommunications company, including Exchange Carriers and Interexchange Carriers, or a reseller of exchange or interexchange services that offers 800 Service to end users.

End Office Switch

The term "End Office Switch" denotes a local Telephone Company switching system where Telephone Exchange Service customer station loops are terminated for purposes of interconnection to trunks. Included are Remote Switching Modules and Remote Switching Systems served by a host office in a different wire center.

End User

The term "End User" denotes any customer of an interstate or foreign telecommunications service that is not a carrier, except that a carrier other than a telephone company shall be deemed to be an "end user" when such carrier uses a telecommunications service for administrative purposes and a person or entity that offers telecommunications services exclusively as a reseller shall be deemed to be an "end user" if all resale transmissions offered by such reseller originate on the premises of such reseller.

Enhanced DSR Node (T)

See also the definition of Node following. The term enhanced DSR node (T) denotes a node made available after March 20, 2003 that provides additional feature functionality that is not available with the existing first-generation DSR nodes. Enhanced DSR nodes are capable of (T) supporting DS1 and Gigabit Ethernet ports at the OC12, OC48 and OC192 levels.

Entrance Facility

The term "Entrance Facility" denotes transport from the customer designated premises to the serving wire center of the customer premises or to an alternate wire center negotiated with the Telephone Company.

Entry Switch

See First Point of Switching.

REGULATIONS, RATES AND CHARGES

Applying to the provision of Access Services
within a Local Access and Transport Area (LATA)
or equivalent market areas for
Connection to Interstate Communications Facilities
for Customers within the operating territory of

Qwest Corporation
in the State(s) of
Arizona (AZ) (Company Code [CC] 5101)
Colorado (CO) (CC 5102)
Idaho (ID - Boise LATA) (CC 5103)
Idaho (ID - Spokane LATA) (CC 5162)
Iowa (IA) (CC 5141)
Minnesota (MN) (CC 5142)
Montana (MT) (CC 5104)
Nebraska (NE) (CC 5143)
New Mexico (NM) (CC 5105)
North Dakota (ND) (CC 5144)
Oregon (OR) (CC 5163)
South Dakota (SD) (CC 5145)
Utah (UT) (CC 5107)
Washington (WA) (CC 5161)
Wyoming (WY) (CC 5108)

as provided herein

d/b/a CenturyLink QC (C)

Access Services are provided by means of wire, fiber optics, radio or
any other suitable technology or a combination thereof.

The services offered herein by Qwest Corporation d/b/a CenturyLink QC, whether under that name or the trade or brand name CenturyLink, are subject to the term and conditions of this Tariff. (N) | (N)

[1] This entire Tariff is issued under the authority of Special Permission No. 00-072.

(Filed under Transmittal No. 450.)

Issued: September 16, 2011 Effective: October 1, 2011

By: Director - Federal Regulatory
10th Floor (T)
1801 California Street
Denver, Colorado 80202

2. GENERAL REGULATIONS

2.6 DEFINITIONS (Cont'd)

End Office Switch

The term "End Office Switch" denotes a local Company switching system where Telephone Exchange Service customer station loops are terminated for purposes of interconnection to trunks. Included are Remote Switching Modules and Remote Switching Systems served by a host office in a different wire center.

End User

"End User" means any customer of an interstate or foreign telecommunications service that is not a carrier, except that a carrier (other than a telephone company) shall be deemed to be an "end user" when such carrier uses a telecommunications service for administrative purposes and a person or entity that offers telecommunications services exclusively as a reseller shall be deemed to be an "end user" if all resale transmissions offered by such reseller originates or terminates on the premises of such reseller.

Entrance Facility

The term "Entrance Facility" denotes (1) the dedicated Switched Access transport facility from the customer's premises or point of demarcation to the Company serving wire center or (2) the fiber optic cable from the Virtual Expanded Interconnection - Collocation (EIC) point of interconnection utilizing Company-owned conventional single mode type of fiber optic cable to the Virtual interconnector-designated equipment.

FACILITIES FOR INTERSTATE ACCESS

Regulations, Rates and Charges Applicable to

Facilities for Interstate Access, Ancillary and Miscellaneous Services

provided by

Frontier Telephone Companies

to Interstate Customers

Services herein are provided by means of wire, fiber optics, radio or any other suitable technology or a combination thereof.

The geographical applications are as indicated following the names of the issuing carriers on Title Page 2.

Issued under authority of Special Permission No. 10-010.

ISSUING CARRIERS

Frontier Midstates Inc.
For the States of: Indiana
Michigan

Frontier North Inc.
For the States of: Illinois
Indiana
Michigan
Ohio
Wisconsin

Frontier Communications West Coast Inc. (C)
For the State of: California

Frontier Communications Northwest Inc.
For the States of: Idaho
Oregon
Washington

Frontier Communications of the Carolinas Inc.
For the States of: Illinois
North Carolina
South Carolina

The original effective date for Frontier Telephone Companies Tariff FCC No. 5 is July 1, 2010. (N)

2. GENERAL REGULATIONS (Cont'd)

2.6 Definitions (Cont'd)

End Office Switch

The term "End Office Switch" denotes a Telephone Company local switching system located in a wire center where Telephone Company local service subscriber station loops are terminated for purposes of originating and terminating traffic to or from a customer.

End User

The term "End User" means any customer of an interstate or foreign telecommunications service that is not a carrier, except that a carrier, other than the Telephone Company, shall be deemed to be an "end user" to the extent that such carrier uses a telecommunications service for administrative purposes, and a person or entity that offers telecommunications services exclusively as a reseller shall be deemed to be an "end user" if all resale transmissions offered by such reseller originate on the premises of such reseller (e.g., hotels, motels and shared tenant services).

Engineering Review

The term "Engineering Review" denotes the examination of an ASR with a customer requested change to determine if a design change is required. It includes, but is not limited to, the review for possible change requirements in equipment, interfaces, circuit configurations, engineering records, and billing.

Entry Switch

See First Point of Switching.

Excess Capacity

The term "Excess Capacity" denotes a quantity of FIA requested by the customer which is greater than that which the Telephone Company would construct to fulfill the customer's ASR.

Exchange

The term "Exchange" denotes a unit generally smaller than a Local Access and Transport Area (LATA), established by the Telephone Company for the administration of communications service in a specified area which usually embraces a city, town or village and its environs. It consists of one or more central offices together with the associated facilities used in furnishing communications service within that area. One or more designated exchanges comprise a given LATA.

Exchange Access Signaling

The term "Exchange Access Signaling" denotes the signaling system used by equal access end offices to transmit originating information and address digits to the customer's premises and includes the means of verifying the receipt of these address digits. Features of this system include overlap outpulsing (in suitably equipped end offices), identification of the type of call, identification of the ten-digit telephone number of the calling party, and acknowledgement wink supervisory signals.

Cancels CenturyTel Operating Companies
Tariff F.C.C. No. 1
Original Title Page 1 (x)

ACCESS SERVICE

Regulations, Rates and Charges
applying to the provision of Access Services
within a Local Access and Transport Area (LATA) or
equivalent Market Area for connection to interstate
communications facilities for Interstate Customers within
the operating territories of the Issuing Carriers
listed on Original Page 23.

The name, title and street address of this tariff's Issuing Officer are located on the bottom of the Title Page and Check Sheets. The title and street address of the Issuing Officer is located on the bottom of each page thereafter.

Access Services are provided by means of wire, fiber optics, radio or any other suitable technology or a combination thereof.

(x) CenturyLink Operating Companies Tariff F.C.C. No. 1 is being issued on not less than one day's notice under authority of Special Permission No. 11-002 of the Federal Communications Commission and contains rates and regulations previously found in CenturyTel Operating Companies Tariff F.C.C. No. 1.

ACCESS SERVICE

ISSUING CARRIERS

CENTURYTEL OF OHIO, INC.
CENTURYTEL OF WISCONSIN, LLC
CENTURYTEL OF MIDWEST-MICHIGAN, INC.
CENTURYTEL OF MICHIGAN, INC.
CENTURYTEL OF CENTRAL WISCONSIN, LLC
TELEPHONE USA OF WISCONSIN, LLC
SPECTRA COMMUNICATIONS GROUP, LLC

CONCURRING CARRIERS

NO CONCURRING CARRIERS

CONNECTING CARRIERS

NO CONNECTING CARRIERS

OTHER PARTICIPATING CARRIERS

NO OTHER PARTICIPATING CARRIERS

REGISTERED SERVICE MARKS

NONE

REGISTERED TRADEMARKS

NONE

2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Effective 2-Wire

The term "Effective 2-Wire" denotes a condition which permits the simultaneous transmission in both directions over a channel, but it is not possible to insure independent information transmission in both directions. Effective 2-wire channels may be terminated with 2-wire or 4-wire interfaces.

Effective 4-Wire

The term "Effective 4-Wire" denotes a condition which permits the simultaneous independent transmission of information in both directions over a channel. The method of implementing effective 4- wire transmission is at the discretion of the Telephone Company (physical, time domain, frequency-domain separation or echo cancellation techniques). Effective 4-wire channels may be terminated with a 2-wire interface at the customer's premises. However, when terminated 2-wire, simultaneous independent transmission cannot be supported because the two wire interface combines the transmission paths into a single path.

End Office

The term "End Office" denotes a local Telephone Company switching system where Telephone Exchange Service customer station loops are terminated for purposes of interconnection to each other and to trunks. This term includes Remote Switching Modules/Systems served by a Host Central Office in a different wire center.

End User

The term "End User" means any customer of an interstate or foreign telecommunications service that is not a carrier, except that a carrier other than a telephone company shall be deemed to be an "end user" when such carrier uses a telecommunications service for administrative purposes, and a person or entity that offers telecommunications service exclusively as a reseller shall be deemed to be an "end user" if all resale transmissions offered by such reseller originate on the premises of such reseller.